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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Josef Eichinger

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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

AMINZAY, SHAIMA Q

ART UNIT

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2618

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,585	Applicant(s) EICHINGER ET AL.	
	Examiner SHAIMA Q. AMINZAY	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 23, 2008 has been entered.

Response to Arguments

Applicant's arguments have been fully considered.

1. Response to arguments with respect to rejected claims 26-30 under Claim Rejections - 35 USC 102(e) is **moot** as the new ground(s) of rejections necessitate by amendments to the claims, therefore, the Claim Rejections-35 U.S.C. 102(e) with respect to claims 26-30 withdrawn.
2. Response to arguments with respect to rejected claims 11-25 under Claim Rejections - 35 USC 103(a) is **moot** as the new ground(s) of rejections necessitate by amendments to the claims, therefore, the Claim Rejections-35 U.S.C. 103(a) with respect to claims 11-25 withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11-13, 15, 17, 21, 23, and 25-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Childress (Childress et al., U. S. Patent 4,905,234).

Regarding claim 11, Childress discloses a method for transmitting data in a radio communication system (*e.g., Fig. 2-3, Abstract:1-22, the data is being transmitted in the radio system (50)*), comprising: transmitting data from a transmitting station to a data-receiving station over at least two relay stations (*e.g., 6:5-21, 7:15-19, 27-30, the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over "one or more repeaters" (relays)*), each relay station receiving and forwarding the data (*e.g., 6:5-21, 7:15-19, 27-30, the transmitted data from the transmitter station is received by "one or more repeaters" (relays) and forward to the receiving station*); generating requests for retransmission if it is determined that the received data is not sufficiently free of error (*e.g., Fig. 2-3, 6:5-21, 16:18-29, 59-67, the request for re-transmission is being generated by the receiving station (56) when configured that the received data is erroneous*), the requests for retransmission being generated only at the receiving station (*e.g., Fig. 2-3, 6:5-21, 16:18-29, 59-67, only the receiver station (56) request for re-transmission when received data is erroneous*);

transmitting the requests for retransmission from the receiving station through at least one of the relay stations (*e.g., Fig. 2-3, 6:5-21, 16:18-29, 59-67, the receiver station (56) request for re-transmission when received data is erroneous through repeater (54)*); and retransmitting the data from the transmitting station if a request for retransmission is received through the at least one relay station from the receiving station (*e.g., Fig. 2-3, 6:5-21, 16:3-8, 59-67, the transmitter station (52) re-transmits data when receives the receiver station (56) request for re-transmission through repeater (54)*).

Regarding claim 12, Childress discloses the method for transmitting data in a radio communication system (*e.g., Fig. 2-3, Abstract:1-22, the data is being transmitted in the radio system (50)*), comprising: transmitting data from a transmitting station to a data-receiving station over at least two relay stations (*e.g., 6:5-21, 7:15-19, 27-30, the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over "one or more repeater" (relays)*), each relay station receiving and forwarding the data (*e.g., 6:5-21, 7:15-19, 27-30, the transmitted data from the transmitter station is received by "one or more repeaters" (relays) and forward to the receiving station*); acknowledging receipt of the data with an acknowledgement by the data-receiving station (*e.g., 6:5-21, 16:3-8, 18-29, the receiving station (56) acknowledges the data reception*); transmitting requests for retransmission from the data-receiving station through at least one of the relay stations (*e.g., Fig. 2-3, 6:5-21, 16:18-29, 59-67, the receiver station (56) request for re-transmission when received data is erroneous through repeater (54)*); and retransmitting the data in the event of unsuccessful

Art Unit: 2618

transmission of the data (e.g., 6:5-21, 16:3-8, 59-67, when data transmission unfavorable data is being retransmitted), when the acknowledgement is not received (e.g., 6:5-21, 16:8-11, when no acknowledgement is received data is being retransmitted), retransmission of the data being controlled only by the transmitting station (e.g., 16:3-29, 59-67, the transmitting station (52) alone manages the retransmission to receiving station (56)).

Regarding claim 26, Childress discloses a relay station of a radio communication station (e.g., Fig. 2-3, 6:5-14, 29-33, 7:14-30, the repeater (relay) station (54) or the communication system (50)), comprising: a receiving device to receive data destined for a receiving station (e.g., Fig. 2-3, 6:5-14, 29-33, 7:14-30, the receiver (72) receives data for destination receiving station (56)); an analyzing device to analyze said data with regard to its reception quality and produce a reception result (e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, the radio repeater (54) transceiver (Fig. 3) receives (e.g. receiver 72) data from the transmitter station (52), the data is being detected for transmission strength before transmitted to the receiver station (56)); and a transmitting device to selectively forward the data to the receiving station (e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, the radio repeater (54) transceiver (Fig. 3) transmitter (e.g. receiver 70) transmits the chosen good data to the receiving station (56)), depending on directly receiving the reception result of the analyzing device (e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, the radio repeater (54) transceiver (Fig. 3) processing/detecting the signal to be transmitted and accordingly the chosen data is being transmitted to receiving station (56)).

Regarding claims 13 and 21, Childress teaches all the limitations of claims 11, 12, and further, Childress teaches wherein at least one of the relay stations checks the data received from the transmitting station with regard to reception quality (*e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, the radio repeater (54) transceiver (Fig. 3) receives (e.g. receiver 72) data from the transmitter station (52), the data is being detected for transmission strength before transmitted to the receiver station (56)*), if the reception quality does not meet a determined level of quality of received data, the relay station does not forward said data to the receiving station *e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, the radio repeater (54) transceiver (Fig. 3) transmitter (e.g. receiver 70) can not transmit when does not meet the expected value for transmission with low strength*), and if the reception quality meets a determined level of quality of received data, the relay station does forward said data to the receiving station (*e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, the radio repeater (54) transceiver (Fig. 3) transmitter (e.g. receiver 70) transmits the chosen good data to the receiving station (56)*).

Regarding claims 15 and 23, Childress teaches all the limitations of claims 13, 12, and further, Childress teaches wherein error correction and/or error detection is performed in at least one of the relay stations prior to forwarding the data (*e.g., 16:3-29, data error (CRC) is being detected and data is modified for transmission to repeater (54)*).

Regarding claims 17 and 25, Childress teaches all the limitations of claims 11, 12, and further, Childress teaches wherein the transmitting station, the receiving station and at least some of the relay stations belong to a radio communication system communicating on a single frequency (*e.g., 6:15-21, the transmitter station (52), the repeater station (54), and the receiver station (56) operates on one (or more) frequency*).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14, 16, 18-20, 22, 24, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Childress (Childress et al., U. S. Patent 4,905,234) in view of Khayrallah (Khayrallah, U.S. Patent 7,113,745).

Regarding claims 14 and 22, Childress teaches all the limitations of claims 13, 12, and further, Childress teaches wherein the relay stations receive the data [in parallel] and check the reception quality of the received data (*e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, the radio repeater (54) transceiver (Fig. 3) receives (e.g. receiver 72) data from the transmitter station (52), the data is being detected for transmission strength before*

transmitted to the receiver station (56)), a first relay station receives the data with acceptable reception quality, and only the first relay station transmits the data to the receiver station (e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, the radio repeater (54) transceiver (Fig. 3) transmitter (e.g. receiver 70) transmits the chosen good data to the receiving station (56)).

Although, Childress does not specifically teach wherein the relay stations receive the data in parallel, Childress teaches more than one repeaters receive the transmitted signal from the transmitter station (e.g., 6:5-21, 7:15-19, 27-30, the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over “one or more repeaters” (relays)).

In a related art dealing with communication system relaying retransmission signal (e.g., Fig. 1-4, Abstract:1-4, 1:39-45, the data is being transmitted in the radio system (10) between transmitter unit (20) and receiver unit (50) through intermediate units (relays) (30) and (40)), Khayrallah teaches wherein the relay stations receive the data in parallel (e.g., Fig. 1-4, Abstract:1-4, 1:39-45, 2:23-26, the transmitter unit (20) transmits data that is being received by both intermediate units (30 and 40) simultaneously (parallel) to be forwarded to the receiver unit (50)).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Khayrallah’s communication system transmission repeaters with Childress’s communication system single repeater to provide communication with controlling connection via repeaters in order to avoid fading or failing communication and to conserve power (Khayrallah, e.g., 1:12-15, 51-54).

Regarding claims 16 and 24, Childress teaches all the limitations of claims 11, 12, and further, Childress teaches wherein a plurality of the relay stations receive the data [*in parallel*] (e.g., 6:5-21, 7:15-19, 27-30, *the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over “one or more repeaters” (relays)*), check the reception quality of the data and produce a reception result (e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, *the radio repeater (54) transceiver (Fig. 3) receives (e.g. receiver 72) data from the transmitter station (52), the data is being detected for transmission strength before transmitted to the receiver station (56)*), and in at least a first relay station, a determination is made on whether or not to forward the data based on the reception result of the first relay station and based on the reception result of another relay station (e.g., Fig. 2-3, 6:5-14, 26-33, 7:14-30, *the radio repeater (54) transceiver (Fig. 3) configures the selected data for forwarding between receiver station (52) and transmitter station (56)*).

Although, Childress does not specifically teach the data relays receiving data in parallel, Childress teaches more than one repeaters receive data for forwarding between the transmitter station (52) and receiver station (56) (e.g., 6:5-21, 7:15-19, 27-30, *the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over “one or more repeaters” (relays)*).

In a related art dealing with communication system relaying retransmission signal (e.g., Fig. 1-4, Abstract:1-4, 1:39-45, *the data is being transmitted in the radio system (10) between transmitter unit (20) and receiver unit (50) through intermediate units (relays)*).

Art Unit: 2618

(30) and (40)), Khayrallah teaches wherein the relay stations receive the data in parallel (e.g., Fig. 1-4, Abstract: 1-4, 1:39-45, 2:23-26, the transmitter unit (20) transmits data that is being received by both intermediate units (30 and 40) simultaneously (parallel) to be forwarded to the receiver unit (50)).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Khayrallah's communication system transmission repeaters with Childress's communication system single repeater to provide communication with controlling connection via repeaters in order to avoid fading or failing communication and to conserve power (*Khayrallah, e.g., 1:12-15, 51-54*).

Regarding claims 18 and 28, Childress teaches all the limitations of claims 11, 26, and further, Childress teaches wherein the data is forwarded over [different parallel] paths via different relay stations, and the data is preemphasized and/or deemphasized in the relay stations (*e.g., 6:5-21, 7:15-19, 27-30, 26-33, the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over "one or more repeaters" (relays), and the data is being detected for transmission strength before forwarding*).

Although, Childress does not specifically teach the data forwarding over different parallel relay paths, Childress teaches more than one repeaters receive data for forwarding between the transmitter station (52) and receiver station (56) (*e.g., 6:5-21, 7:15-19, 27-30, the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over "one or more repeaters"*

Art Unit: 2618

(relays)).

In a related art dealing with communication system relaying retransmission signal (*e.g.*, *Fig. 1-4, Abstract:1-4, 1:39-45, the data is being transmitted in the radio system (10) between transmitter unit (20) and receiver unit (50) through intermediate units (relays) (30) and (40))*, Khayrallah teaches wherein the relay stations receive the data in parallel (*e.g.*, *Fig. 1-4, Abstract:1-4, 1:39-45, 2:23-26, the transmitter unit (20) transmits data that is being received by both intermediate units (30 and 40) simultaneously (parallel) to be forwarded to the receiver unit (50))*).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Khayrallah's communication system transmission repeaters with Childress's communication system single repeater to provide communication with controlling connection via repeaters in order to avoid fading or failing communication and to conserve power (*Khayrallah, e.g., 1:12-15, 51-54*).

Regarding claims 19 and 29, Childress teaches all the limitations of claims 11, 26, and further, Childress teaches wherein the data is forwarded over [different parallel] paths via different relay stations, and the data is decoded and/or encoded in the relay stations (*e.g.*, *Fig. 2-3, 6:5-14, 29-33, 7:27-30, 37-46, the data is being forwarded over more than one repeater, and data is being encoded and decoded in the repeater radio transceiver*).

Although, Childress does not specifically teach the data forwarding over different parallel relay paths, Childress teaches more than one repeaters receive data for forwarding between the transmitter station (52) and receiver station (56) (*e.g.*, *6:5-21*,

Art Unit: 2618

7:15-19, 27-30, the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over "one or more repeaters" (relays)).

In a related art dealing with communication system relaying retransmission signal (e.g., *Fig. 1-4, Abstract:1-4, 1:39-45, the data is being transmitted in the radio system (10) between transmitter unit (20) and receiver unit (50) through intermediate units (relays) (30) and (40))*, Khayrallah teaches wherein the relay stations receive the data in parallel (e.g., *Fig. 1-4, Abstract:1-4, 1:39-45, 2:23-26, the transmitter unit (20) transmits data that is being received by both intermediate units (30 and 40) simultaneously (parallel) to be forwarded to the receiver unit (50))*).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Khayrallah's communication system transmission repeaters with Childress's communication system single repeater to provide communication with controlling connection via repeaters in order to avoid fading or failing communication and to conserve power (*Khayrallah, e.g., 1:12-15, 51-54*).

Regarding claims 20, and 30, Childress in view of Khayrallah teach all the limitations of claims 11, 26, and further, Khayrallah teaches wherein the data is transmitted [in parallel] over different paths, and the data is received overlaid at the receiver station and processed jointly (e.g., *Fig. 2-3, 6:5-14, 29-33, 7:27-46, the data is being forwarded over more than one repeater, and data is being process in the relay for forwarding to the receiver unit (56), and further data id being processed in the receiver unit together*).

Although, Childress does not specifically teach the data forwarding over different parallel relay paths, Childress teaches more than one repeaters receive data for forwarding between the transmitter station (52) and receiver station (56) (*e.g.*, 6:5-21, 7:15-19, 27-30, *the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over “one or more repeaters” (relays).*

In a related art dealing with communication system relaying retransmission signal (*e.g.*, *Fig. 1-4, Abstract:1-4, 1:39-45, the data is being transmitted in the radio system (10) between transmitter unit (20) and receiver unit (50) through intermediate units (relays) (30) and (40)*), Khayrallah teaches wherein the relay stations receive the data in parallel (*e.g.*, *Fig. 1-4, Abstract:1-4, 1:39-45, 2:23-26, the transmitter unit (20) transmits data that is being received by both intermediate units (30 and 40) simultaneously (parallel) to be forwarded to the receiver unit (50)*).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Khayrallah's communication system transmission repeaters with Childress's communication system single repeater to provide communication with controlling connection via repeaters in order to avoid fading or failing communication and to conserve power (*Khayrallah, e.g., 1:12-15, 51-54*).

Regarding claim 27, Childress teaches all the limitations of claim 26, and further, Khayrallah teaches wherein the data is transmitted [in parallel] to a plurality of relay stations (*e.g., Fig. 2-3, 6:5-14, 29-33, 7:27-46, the data is being forwarded over more*

Art Unit: 2618

that one repeater), and the relay station forwards the data only if its data reception is superior to that of other relay stations (e.g., Fig. 2-3, 6:5-14, 29-33, 7:27-46, the data is being forwarded over more than one repeater, and data is being processed in one of the relays that serves best the receiver and transmitter units).

Although, Childress does not specifically teach the data forwarding over parallel relays, Childress teaches more than one repeaters receive data for forwarding between the transmitter station (52) and receiver station (56) (e.g., 6:5-21, 7:15-19, 27-30, the communication system (50) includes transmitting data from transmitting station (52) to the data receiving station (56) over “one or more repeaters” (relays)).

In a related art dealing with communication system relaying retransmission signal (e.g., Fig. 1-4, Abstract:1-4, 1:39-45, the data is being transmitted in the radio system (10) between transmitter unit (20) and receiver unit (50) through intermediate units (relays) (30) and (40)), Khayrallah teaches wherein the relay stations receive the data in parallel (e.g., Fig. 1-4, Abstract:1-4, 1:39-45, 2:23-26, the transmitter unit (20) transmits data that is being received by both intermediate units (30 and 40) simultaneously (parallel) to be forwarded to the receiver unit (50)).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Khayrallah's communication system transmission repeaters with Childress's communication system single repeater to provide communication with controlling connection via repeaters in order to avoid fading or failing communication and to conserve power (Khayrallah, e.g., 1:12-15, 51-54).

Conclusion

The prior art made of record considered pertinent to applicant's disclosure, see PTO-892 form.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 571-272-7874. The examiner can normally be reached on 7:00 AM -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew D. Anderson can be reached on 571-272-4177. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Shaima Q. Aminzay/
Examiner, Art Unit 2618

September 14, 2008